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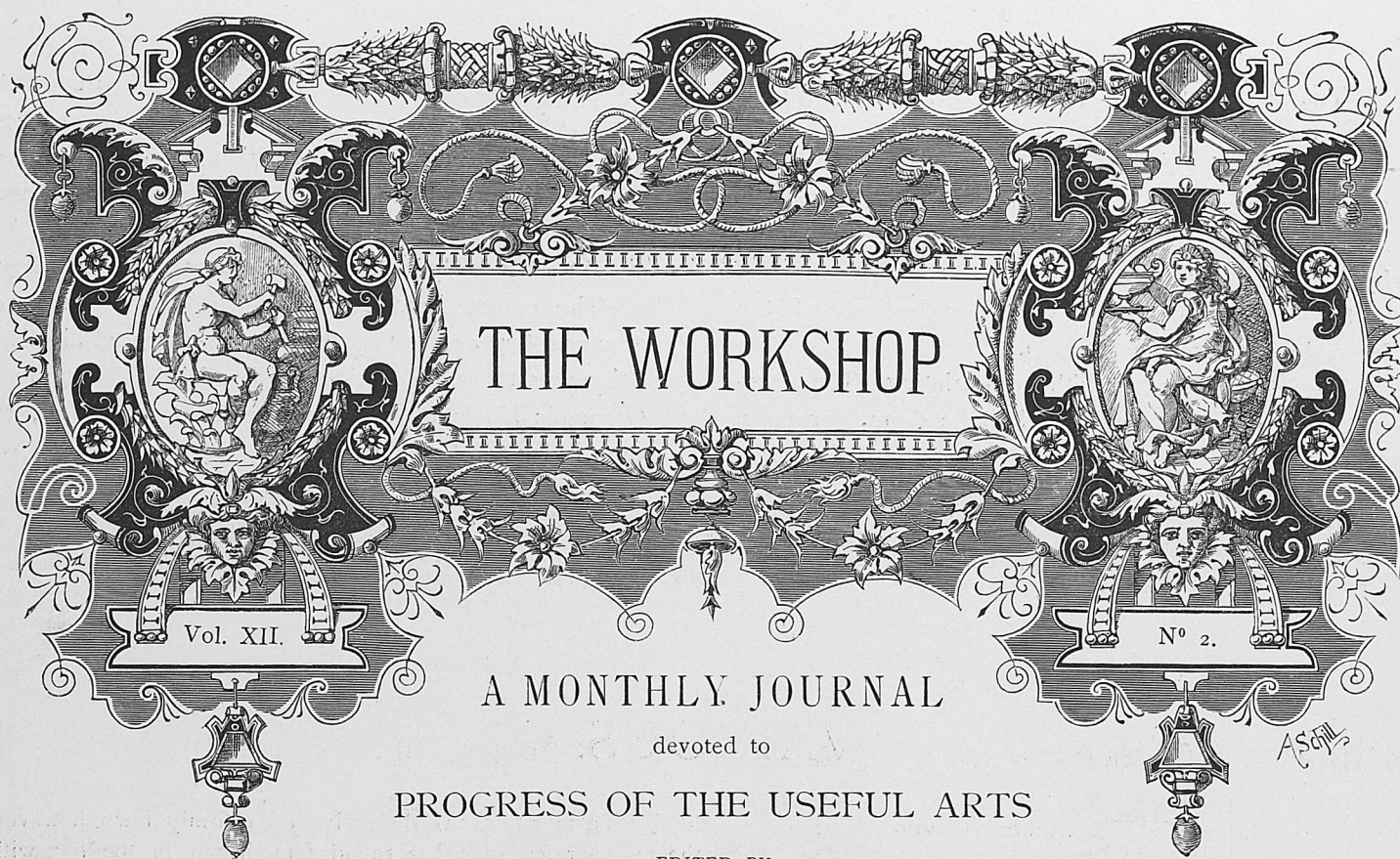
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EXPLANATION OF THE PLATES.

Plate 9. — Clock, executed in Gold, Silver, Ivory, Enamel Lapis lazuli, and Rock Crystal by L. Falize, Son, in Paris. The figures by Carrier-Belleuse, Sculptor.

The works in precious metals, which in our days are resorted to in indifferent branches of Art-Industry, and are often produced wholesale by various manufacturing processes, as casting, stamping, &c., used to be in former times the property of the goldsmith, who was equally clever in works of bronze and brass, as he excelled in the art of enamelling and niello. It is sufficient to mention the names of Lorenzo Ghiberti and Benvenuto Cellini (1500—1571) in Italy, and the Nuremberg Masters, Jamnitzer and Wenzel (1508—1585) in Germany.

Hence originated works of great beauty and elegance in which the different branches of the goldsmith's art concurred to produce that perfect harmony, on which all true art depends. It is different with many of our most costly modern productions, for which the various processes of manufacture are exercised in some degree independently of each other, to the detriment of artistic composition and unity of design. So much the more do we rejoice in creations of true art where, as in the specimen represented by our engraving, ivory carving, repoussé work in gold, silver, and enamelling, all elaborated by the same mind, and worked by the same hand, are made to contribute to an original composition of plastic art which excels by perfection of workmanship and harmony of colors.

The pedestal of the whole, containing the clock-

work, is executed chiefly in lapis lazuli with repoussé work. The six chimerae as well as some other parts are richly enamelled. The medallion in form of a cartouche shows the dial of the hours, the minutes being marked round the socle. Thus every mechanical contrivance is hidden from the eye of the spectator. On this pedestal rests the charming group: Urania with the two figures of children. The figures are in ivory, the celestial globe in rock crystal, drapery, head-dress and zodiac in gold and silver, the latter being enriched with enamelled incrustations representing the constellations. The clock, which has obtained the great medal of honor at the Paris Exhibition, is 0,54 m. high.

Plate 10. — Book Case, designed and manufactured by Flachat and Cochet in Lyon.

Executed in Walnut with Incrustations in green and red Marble (*vert de mer* and *rouge antique*).

Plate 11. — Toilet Table for a Gentleman's Dressing Room, from the design of Ihne and Stegmüller by Krieg and Goerke in Berlin.

Executed in Italian Walnut the Glass is fixed at such a height as to be used while standing.

Plate 12. — Table Cover in Linen Damask, from the design of Prof. Boettger by A. H. C. Westermann's Sons in Bielefeld.

Plate 13. — Silver Goblets, designed and executed by Koch and Bergfeld in Bremen.

Height of covered goblet 0,355 m., of smaller goblet 0,205 m.

The engravings give portions of gilt ornament in relief on foot and cover.

Plate 14. — Panel Ornament in Wood Carving by Sartorio Vincenzo. Modern Italian.

Plate 15. — Bronze Ink-Stand, designed and manufactured by A. Stotz, Stuttgart.

Plate 16. — Book Covers from the collections of the Nuremberg Germanic Museum.

Executed in leather with gold printing. The decoration of back and cover used to be done, formerly, by hand with brass dies, fillets and wheels. The

different parts intended to be gilt were coated with white of eggs, or some size prepared in accordance with the nature of the material to be printed on. Gold-leaf was then applied, and ornaments, lines and titles stamped on with the heated instruments, the surplus of gold being removed by means of wadding.

The covers here engraved are taken from two albums (1609 and 1611), the first, represented full size, belonging to the Merkel collection in the Nuremberg Germanic Museum, the other, not quite full size, to the library of the same.

VARIOUS.

Solution for Brightening Silver.

Cream of tartar, 30 parts; sea salt, 30; sulphate of aluminum and potash, 30; water, 1,500. An extremely brilliant color can be given to silverware by boiling it in this mixture.

To Color Photographs.

Take a strongly printed photograph on paper and saturate it from the back with a rag dipped in castor oil. Carefully rub off all excess from the surface after obtaining thorough transparency. Take a piece of glass an inch larger all round than the print, pour upon it dilute gelatine and then "squeeze" the print and glass together. Allow it to dry, and then work in artist's oil colors from the back until you get the proper effect from the front. Both landscapes and portraits can be effectively colored by the above method without any great skill being required.

Scientific American.

Iron Moulding.

Few processes in metallurgy appear more wonderful to the uninitiated than the conversion of rough pig-iron into the delicate and often beautiful forms of pillar railing or gateways around British homes, or the more ornate grates and fittings which add to the charm of their interior, and yet the art is not a complicated or difficult one. Most of these articles are made in pieces, and afterwards joined together by what are called "fitters", a class of workmen distinct from moulders. The moulder receives a piece of wood or metal, technically designated a pattern, and his business is to turn out a piece of cast-iron exactly the same. To do this he takes a strong iron box without either top or bottom, but separable into two horizontal sections. His workshop is a floor many feet deep with fine dry sand, and laying on it the under half of the box he fills it loosely with the material among his feet. He puts his pattern into this box in a true horizontal position, with the under half of it buried in the sand, and the upper half projecting above the level of the box's rim. He then presses or hammers the sand so firmly that it becomes quite hard; and when finished looks like a piece of stone with the pattern half embedded in it. He then covers the surface with fine dry dust. Placing the upper half of the box on the rim of the under half

he fills it also with sand. Before beating it firmly down, however, the moulder has placed a round smooth pin in the box with its lower end touching the pattern and its upper one projecting some inches above the upper rim of the box. When all is completed, he detaches the upper portion of the box and lifts with it the sand held in the frame. This, of course, has a depression in its under surface corresponding with the upper surface of the pattern. He then takes the pattern from its bed in the under half of the box, examines all the depression formed by it, and if any particles of loose sand have slipped down, removes them and makes all clear and smooth. The pin is withdrawn from the upper portion of the mould, and leaves a hole from the outside into the depression, and the two halves of the box are again united. The box now contains a mass of compact sand with an empty space in the interior corresponding with the pattern. While the mould has been in preparation, iron has been subjected to such a heat in another portion of the room that it is now in a fluid condition, and a portion of it is run into an iron pot, and poured into the hole formed in the mould by the pin. It fills the empty space, and when taken out cold is identical with the pattern. This is the general nature of the process, whether the article cast be an iron rail weighing a few pounds, or the propeller of a steamer, for which 10 or more tons of iron are required. In the one case, however, the work is done by one man, and in the other huge steam-crane are employed to move the enormous masses, and to carry the molten metal to the mould. In another branch of the moulders' art, known as loam casting, instead of the mould being made in sand, it is built with bricks and wet loam, somewhat like mortar, upon a wheeled platform, and then run into an oven, which bakes it as hard as stone. When this is taken out from the oven it is buried in the soft floor, and other means are applied to prevent it yielding to the weight of molten iron poured into its interior.

Iron.

Cement for Wood and Iron.

The *Revista de Olbrus Publico*, speaks of a cement made of oxide of lead and concentrated glycerine, which unites wood to iron, with remarkable efficiency. The composition is insoluble in acids, is unaffected by the action of heat, sets rapidly, and acquires an extraordinary hardness.





Clock, executed in Gold, Silver, Ivory, Enamel Lapis lazuli, and Rock Crystal, by L. Falize, Son, in Paris
The figures by Carrier Belleuse, Sculptor.

From the Paris Exhibition.

(Great Medal of Honor.)



Book-Case, designed and manufactured by Flachat and Cochet in Lyon.

From the Paris Exhibition.



Toilet Table for a Gentleman's Dressing Room, from the design of Ihne and Stegmüller, by Krieg & Gørke in Berlin.

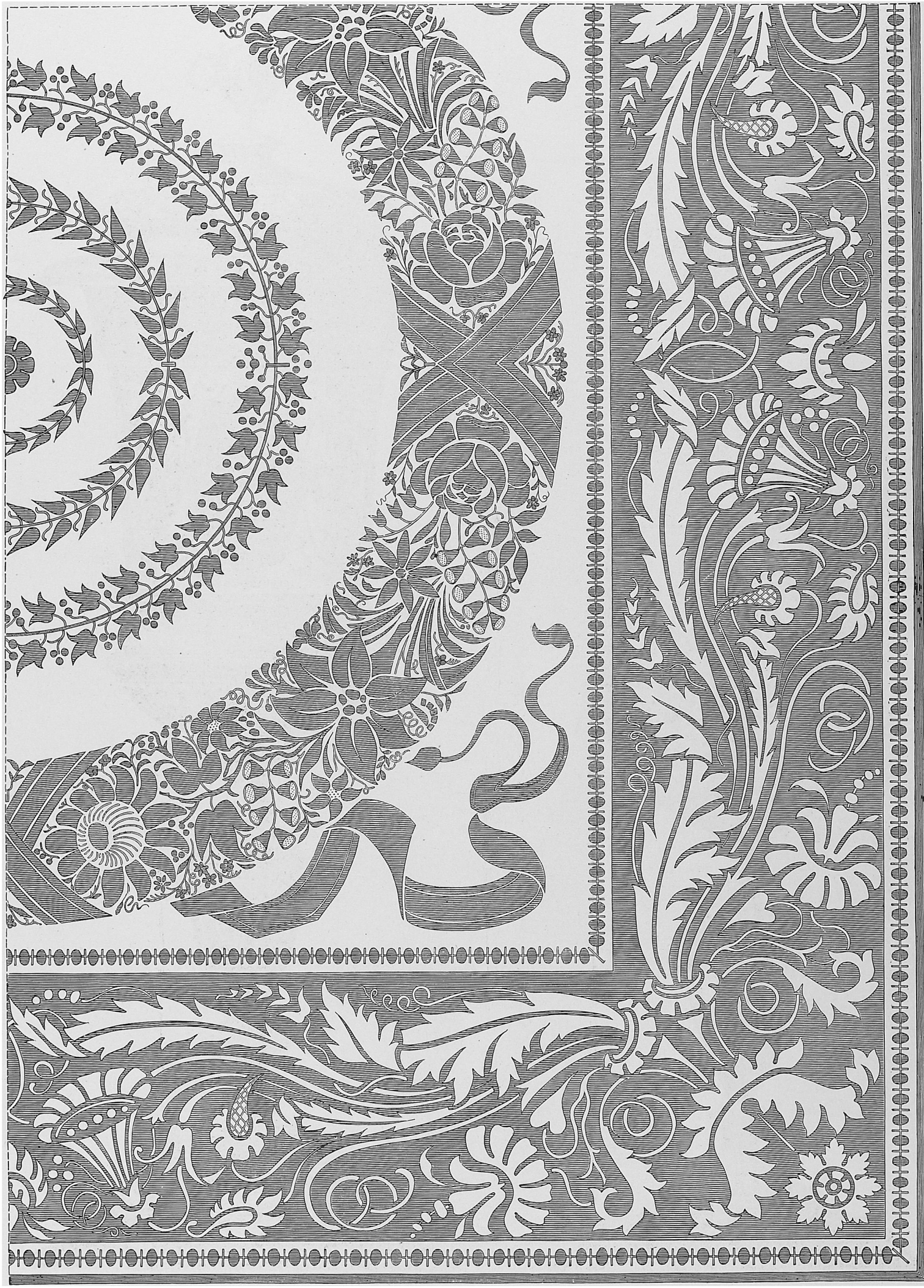


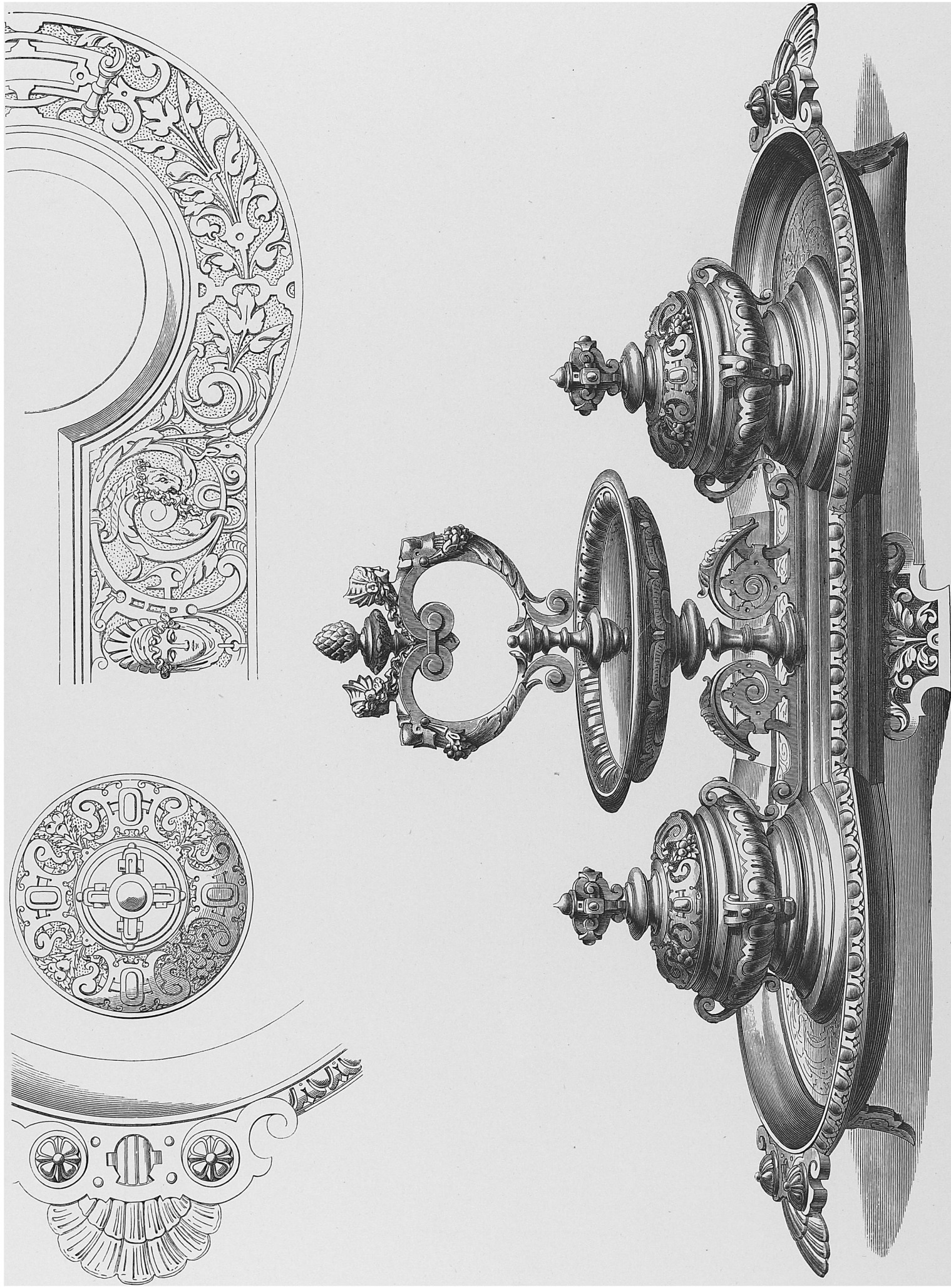
Table Cover in Linen Damask, from the design of Prof. Böttcher in Berlin, by A. H. C. Westermann's Sons in Bielefeld.



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Panel Ornament in Wood Carving by Sartorio Vincenzo. Modern Italian.



Bronze Ink-Stand, designed and manufactured by A. Stotz in Stuttgart.



Book Covers from the Collections of the Nuremberg Germanic Museum.